Figure 1

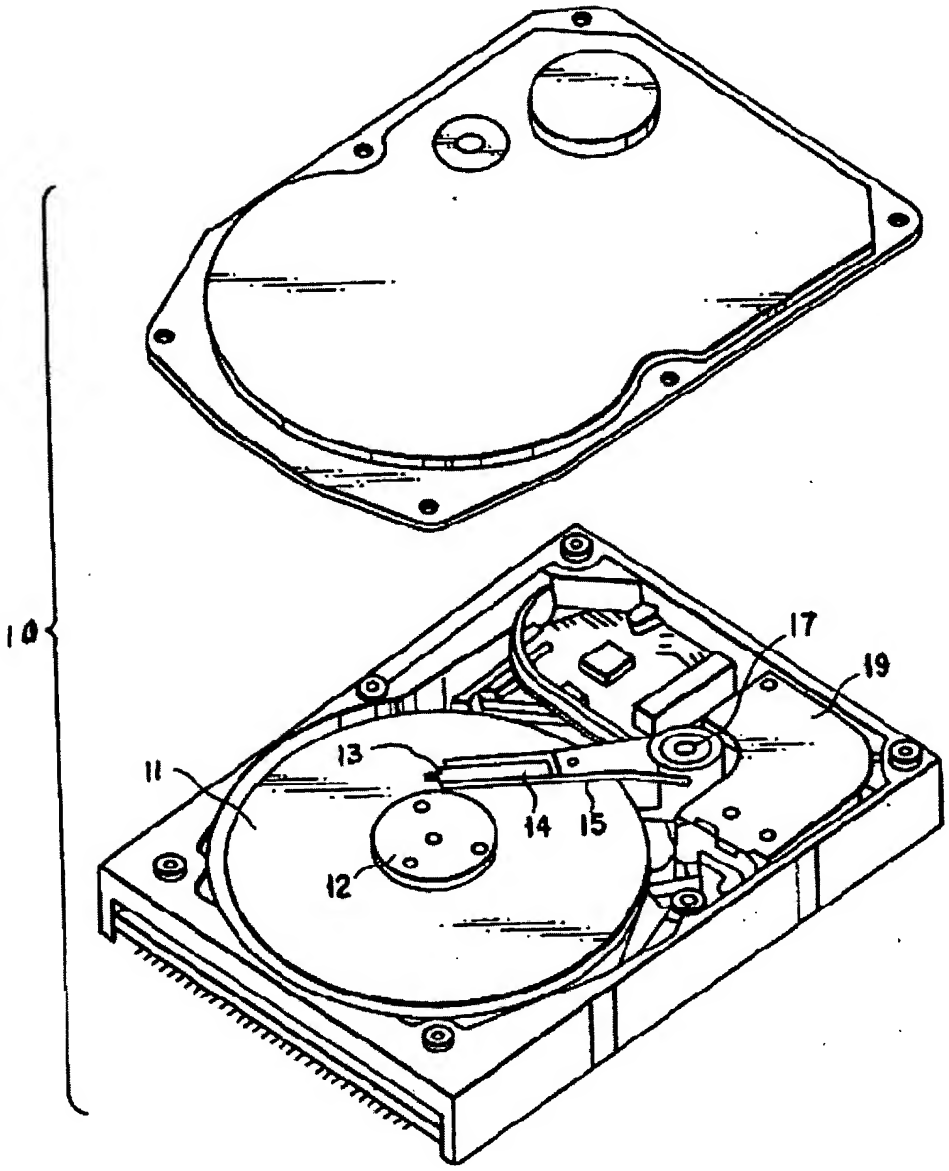


Figure 2

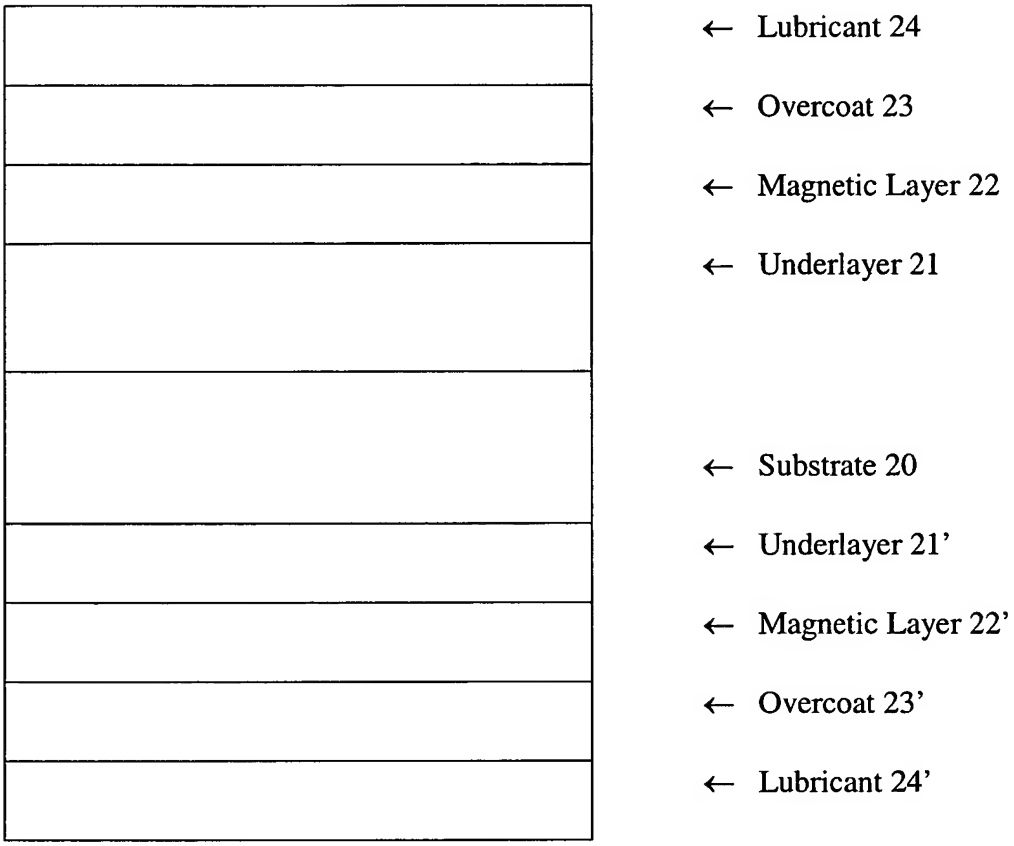

← Lubricant 24
← Overcoat 23
← Magnetic Layer 22
← Underlayer 21
← Substrate 20
← Underlayer 21'
← Magnetic Layer 22'
← Overcoat 23'
← Lubricant 24'

Figure 3

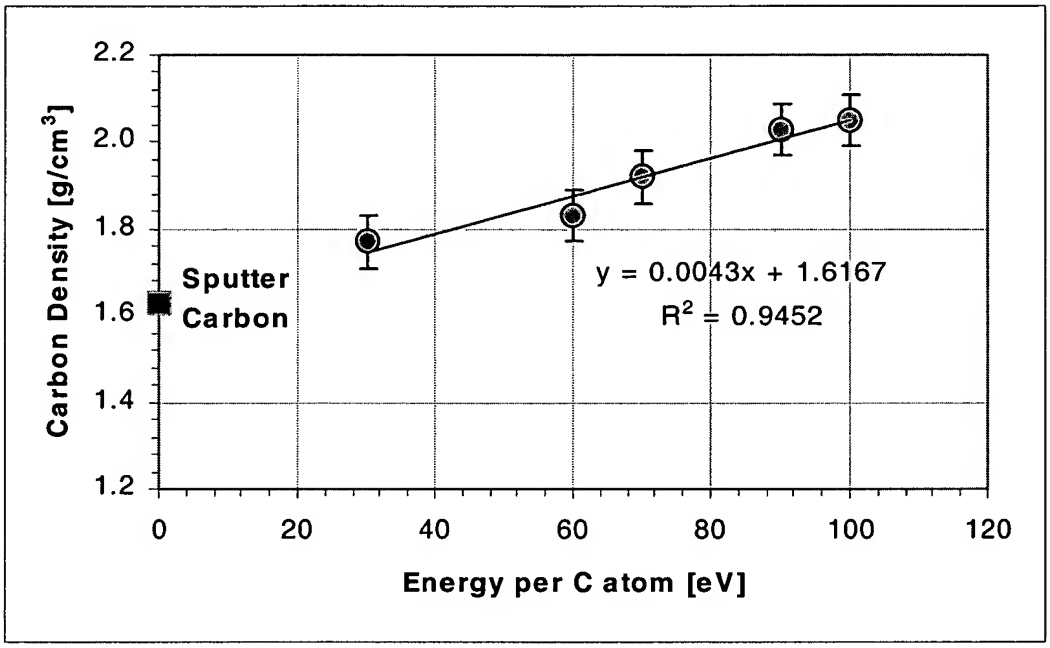

Carbon Density [g/cm3]
2.2
2.0
1.8
1.6
1.4
1.2
0
20
40
60
80
100
120
Energy per C atom [eV]
Sputter Carbon
y = 0.0043x + 1.6167
R2 = 0.9452

Figure 4

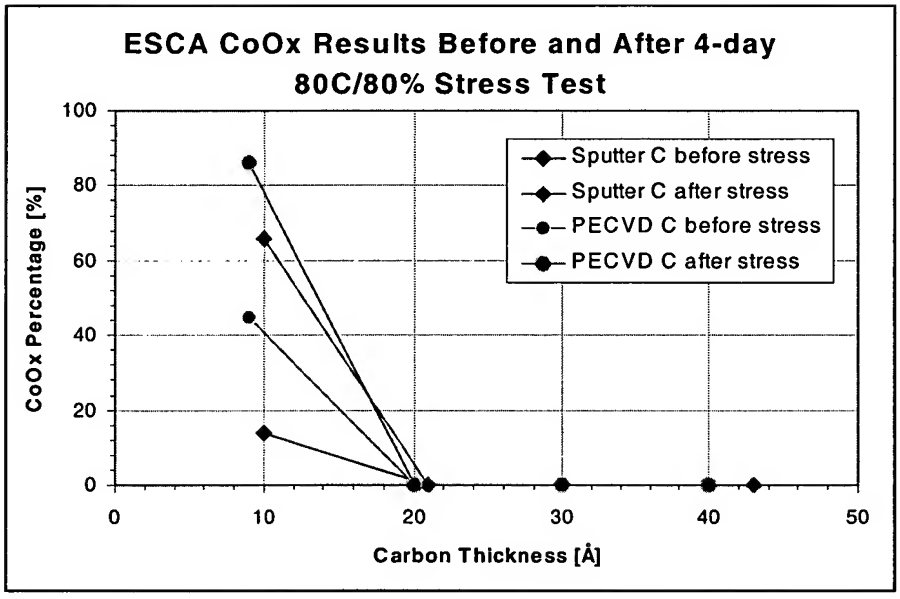

ESCA CoOx Results Before and After 4-day 80C/80% Stress Test
CoOx Percentage [%]
100
80
60
40
20
0
0
10
20
30
40
50
Carbon Thickness [Å]
Sputter C before stress
Sputter C after stress
PECVD C before stress
PECVD C after stress

Figure 5

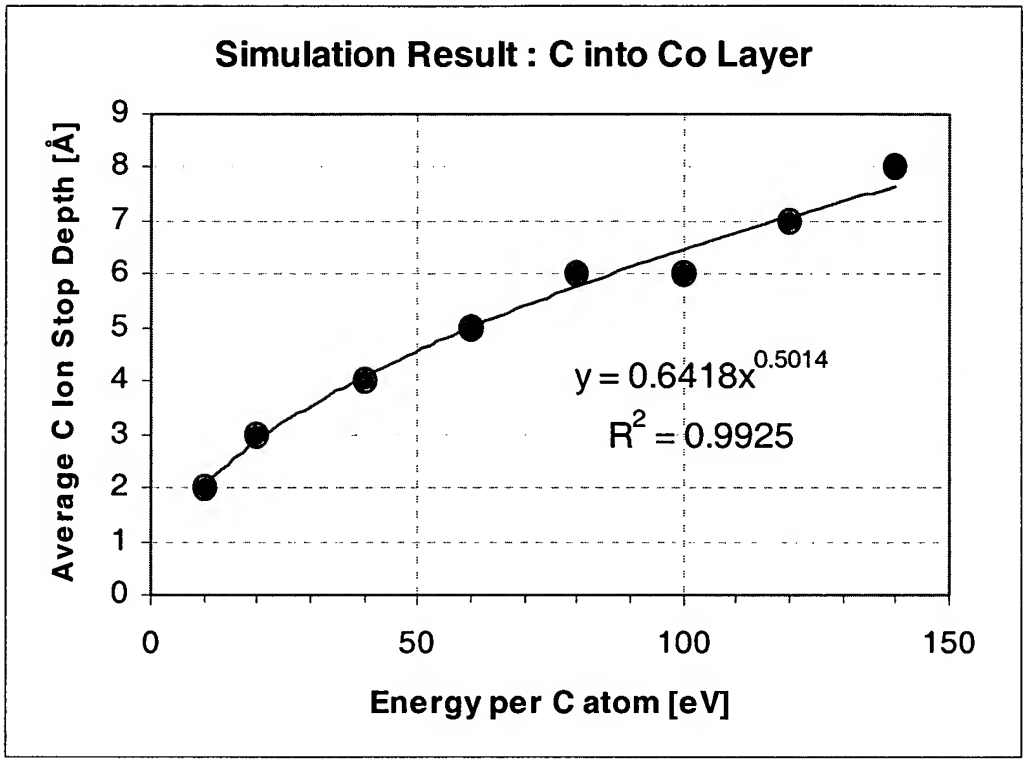

Simulation Result : C into Co Layer
Average C Ion Stop Depth [Å]
Energy per C atom [eV]
y = 0.6418x^0.5014
R^2 = 0.9925
0
1
2
3
4
5
6
7
8
9
0
50
100
150

Figure 6

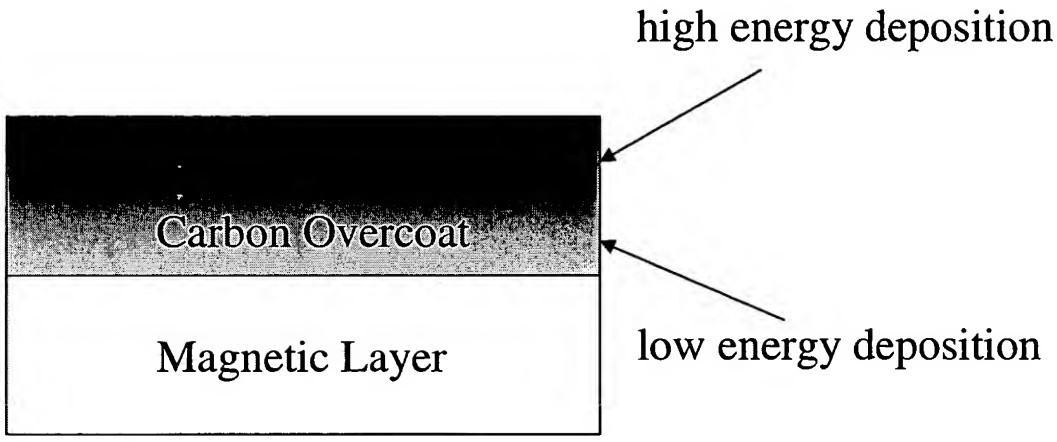

high energy deposition
Carbon Overcoat
Magnetic Layer
low energy deposition

Figure 7

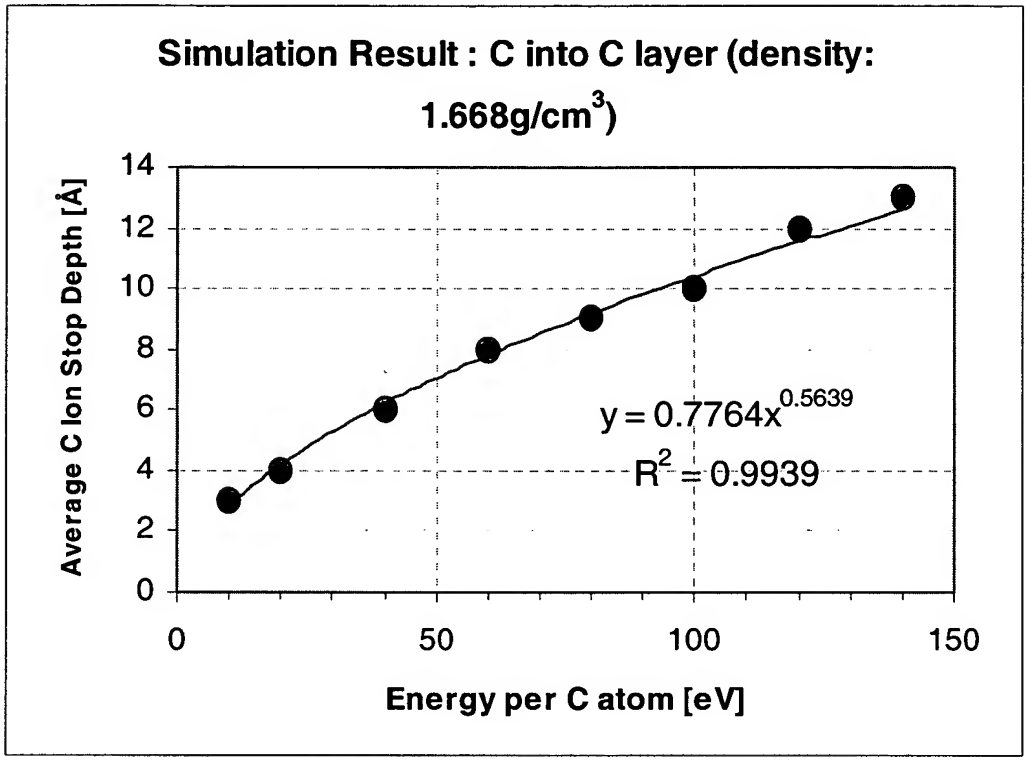
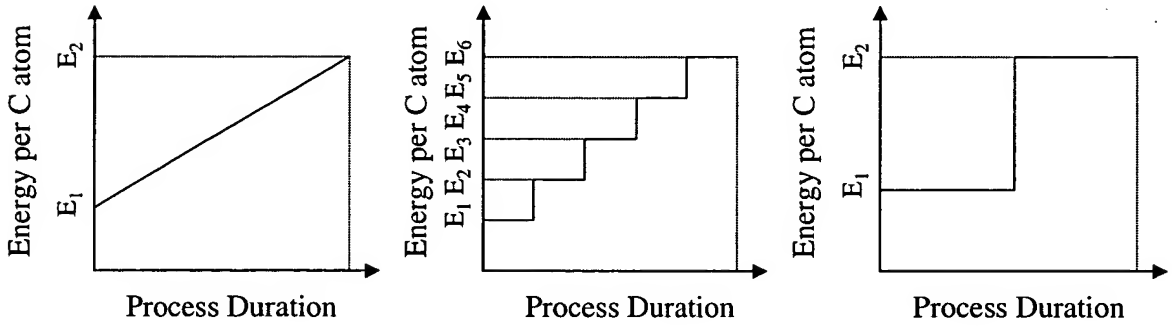

Simulation Result : C into C layer (density: 1.668g/cm3)
Average C Ion Stop Depth [Å]
Energy per C atom [eV]
y = 0.7764x0.5639
R2 = 0.9939
0
2
4
6
8
10
12
14
0
50
100
150

Figure 8


Energy per C atom
E2
E1
Process Duration
Energy per C atom
E1 E2 E3 E4 E5 E6
Process Duration
Energy per C atom
E2
E1
Process Duration

(a) (b) (c)

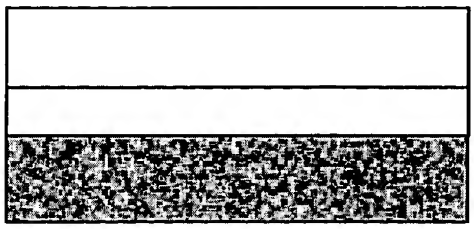



Figure 9